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EXAMINER

JENNISON, BRIAN W

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|--------------------------------------|---|--|
| Office Action Summary | Application No. 10/576,539 | Applicant(s) SCANDELLA ET AL. | |
| | Examiner BRIAN JENNISON | Art Unit 3742 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 June 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 38,39,43-49 and 54-61 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 38,39,43-49 and 54-61 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 38-39, 43-49 and 54-61 rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The amended claim subject matter of $x+y$ being less than 5 mm is not supported in the original specification. Paragraphs [0035] - [0037] discuss the thickness of the cladding being no greater than 4mm and the substrate thickness *preferably* being no greater than 2 mm. In that case $x + y = 6\text{mm}$ which is not less than 5 mm. In the example $x + y = 5\text{ mm}$, none of these paragraphs provide support for $x + y$ being less than 5 mm.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claims 38-39, 43-49 and 54-61 are rejected under 35 U.S.C. 103(a) as being unpatentable over Browne et al (US 5,362,937) in view of Nadeau et al (US 4,733,051), Carpenter (US 2,427,350) and Penney et al (US 4,724,302).**

Browne teaches:

Regarding Claims 38 and 47: A apparatus for and method of manufacturing a hardfaced plate by applying a cladding to a surface of a substrate by arc welding (overlying weld metal, a hard-wearing material, onto metal plates or a substrate done by passing electricity through an electrode. See Column 1, lines 4-10), the method comprising moving the substrate (The metal plates are moved by drive wheels 31 in a given direction relative to the welding gun 43. See Column 4, Lines 1-3) and a continuous arc welding wire feed relative to each other (welding wire 48 is fed through weld heads 49, relative to the plate 10, with electricity supplied to them for arc welding. See Column 4, Lines 32-35), wherein the welding wire feed is in a direction generally transverse to said given direction of relative movement. (Fig 1 shows the wire 48 being fed generally sideways to the plate 10. The surface is horizontal and the wire feed is vertical. The wire is clearly fed in a transverse direction since the path of the wire and the surface of the substrate make a cross, this being the definition of transverse. Fig 1 also shows the welding gun 43 mounted relative to the substrate in a transverse direction as described with the wire. The weld metal will solidify on the surface) Fig 3 shows a plurality of weld beads being applied side by side and Fig 1 show the weld bead applied continuously.

Browne fails to teach:

Regarding Claims 38, 47, 49: The substrate is cylindrical and rotated about a horizontal axis and moving the weld gun relative to said cylindrical substrate in a direction generally parallel to said horizontal axis.

the welding gun being mounted such that a welding tip thereof is located below an uppermost level of the surface of the rotating cylindrical substrate; melting the welding wire to provide molten hard-wearing material on the surface of the rotating cylindrical substrate at a location below the uppermost level of the surface of the rotating cylindrical substrate such that the molten material is moved upwards by the rotation of the cylindrical substrate; and solidifying the molten hard-wearing material to form the cladding on the surface of the cylindrical substrate. A method wherein the profile(s) of the weld bead(s) is monitored and the monitoring is carried out as part of a procedure to maintain a desired profile.

Regarding Claims 46 and 49: The adjustable pivoting of the arm.

Browne teaches:

Regarding Claims 39 and 48: Fig 1 shows the wire 48 being fed from the top side to the substrate 10 to be clad at an acute angle, with the gun also mounted at an acute angle as described above.

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Regarding Claims 44-45, 58-61: The weld head assembly 30 has a reciprocating carrier 40 for transverse reciprocation or oscillation of the weld head in relation to the surface of plate 10 with the reciprocating carrier being the means for moving the welding gun 43.

Browne fails to teach:

Regarding Claims 54-55: A method wherein said monitoring is carried out as part of a procedure to maintain a desired profile for the cladding.

Regarding Claims 43, 56-57: A method wherein at least one of the welding current, arc voltage, relative welding gun and substrate speeds, gun angle and stickout distances is adjusted.

Nadeau teaches:

Regarding Claims 38, 46, 47, 49: Fig 1 clearly shows a pipe, which is a cylindrical surface to be clad, the substrate being cylindrical and rotated. The arm is pivotally mounted relative to the cylindrical substrate as shown in Fig 1 and the cladding is moved upwards by the rotation of the pipe since the welding gun is located below the uppermost level of the cylindrical substrate. **See Column 3, Lines 30-40.**

Regarding Claims 54-55: the monitoring is carried out to maintain a desired weld bead depth and is capable of being applied to cladding. **See Column 5, Lines 25-30.**

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Regarding Claims 43, 56-57: the working parameters are adjusted based on monitoring, including travel speed, wire feed rate, arc voltage, pivoting the welding arm, and moving it towards or away from the substrate. **See Column 5, Lines 45-60**

In view of Nadeau et al's teachings it would have been obvious to one of ordinary skill in the art at the time of the invention to include with the teachings of Browne et al, the weld bead monitoring for a desired cladding profile, the working parameter adjustment, arc voltage, gun speed, gun angle since Nadeau teaches monitoring the depth of a weld bead to maintain a desired height and adjusting the gun travel speed, arc voltage and pivot of the arm for comparing the depth of a weld and adjusting the weld parameters to keep the weld depth at a desired depth.

Carpenter et al teaches:

Regarding Claims 38, 47, 49: Fig 4 shows the sheet which has been formed into a cylinder 10 rotating around a horizontal axis with cladding being applied by arc welding at the surface of the substrate. Fig 4 shows a rotatable means 18 for receiving a cylindrical substrate 10 and rotating it around a horizontal axis with a means for applying cladding to the surface of the cylindrical substrate. Figs 4 and 7 also show the welding rod 100 being located below the uppermost level of the surface of the rotating cylinder. Fig 4 shows the welding gun 58 located on a carriage for moving the welding head parallel to the cylindrical substrate. **See Column 3, Lines 29-60.**

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In view of Carpenter et al's teachings it would have been obvious to one of ordinary skill in the art at the time of the invention to include with the teachings of Browne as modified by Nadeau, the forming the substrate into a cylindrical shape, rotating the so-formed cylindrical substrate about a substantially horizontal axis, rotating substrate at a level below the uppermost level of the rotating cylindrical substrate, rotatable means arranged to receive thereon a substrate to be clad, means for rotating the rotatable means, and hence a substrate received thereon, about a generally horizontal axis, and means arranged to apply, in use, of the rotating substrate at a level below the uppermost region of the rotating substrate surface since, Carpenter teaches the sheet formed into a cylinder and rotating it around a horizontal axis a rotatable means for receiving a cylindrical substrate so a continuous cladding, with uniform thickness may be continuously applied to the cylindrical surface for strengthening the cylinder using arc welding.

Penney et al discloses regarding claims 38 and 47 monitoring the bead height so it is 4 mm. (See Column 5, Lines 1-30) It would have been obvious to adapt Browne in view of Nadeau and in further view of Carpenter with Penney to provide the bead height monitoring to keep the bead height within an acceptable range.

Response to Amendment

3. The amendment filed 6/1/2010 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment

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shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: the manufactured hardfaced plate having a thickness, $x + y$ of less than 5 mm.

Applicant is required to cancel the new matter in the reply to this Office Action.

Response to Arguments

4. Applicant's arguments filed 6/1/2010 have been fully considered but they are not persuasive.

5. In response to applicant's arguments on pages 7 and 8 of the reply against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Applicant argues against Nadeu when this reference is not relied up for the cladding limitation of the claim. Furthermore, since the weld is made in a cylindrical pattern it may be considered cladding since it is covering a portion of the cylinder.

Applicant's arguments completely ignore the Carpenter reference which teaches the substrate being formed into a cylindrical shape, and the continuous weld bead.

Conclusion

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6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to BRIAN JENNISON whose telephone number is (571)270-5930. The examiner can normally be reached on M-Th 9am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, TU HOANG can be reached on 571-272-4780. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/BRIAN JENNISON/
Examiner, Art Unit 3742

8/17/2010
/TU B HOANG/
Supervisory Patent Examiner, Art Unit 3742